

APPENDIX C

PROGRAM COUNTERMEASURE MATERIALS

This appendix contains copies of program countermeasures and supporting materials provided to each city in electronic form. City representatives adapted the materials as necessary for distribution to their neighborhoods or used them as resource material. Included are the following:

- *Heed the Speed* – an 8-1/2 x 11 flyer for residents reproduced in English and Spanish
- *A message for parents* – an 8-1/2 x 11 flyer for parents reproduced in English and Spanish
- *Now that you're a driver* – a flyer for high school students reproduced in English and Spanish – divided into two 4-1/4 x 5-1/2 flyers and printed on both sides
- *Speed is lethal* – an 8-1/2 x 11 flyer for drivers – reproduced on the reverse side of both the Phoenix and Peoria facsimile traffic tickets
- *Speed is lethal* – a 4 x 9-3/8 version of the above flyer for drivers
- *A message for car dealers* – an 8-1/2 x 11 flyer for car dealerships in/near the neighborhoods
- A two-page press release announcing the program
- A set of traffic safety facts that might be used in preparing program publicity materials
- Three sets of articles prepared for inclusion in neighborhood newsletters:
 - *Engineering versus education/enforcement*
 - *Distance to stop*
 - *Driver fatality likelihood*
- Descriptions of problems that can be affected by speeding – prepared as a resource for the newsletter and other articles for the *Heed the Speed* program
- Radio spots:
 - *Heed the Speed – The consequences* – 30 seconds
 - *Heed the Speed – In a hurry* – 15 seconds
 - *Heed the Speed – Station ID* – Live promo
 - *Heed the Speed – Want to be a good neighbor?* – 15 seconds
 - *Heed the Speed – The bumps* – 15 seconds
- Topics for newspaper articles



Many individuals in Phoenix and Peoria have expressed concern about the speeds that vehicles travel in their neighborhoods. **Heed the Speed** is a program that uses education and enforcement to reduce those speeds. The **Heed the Speed** program is a collaborative effort of the traffic and police departments of the cities of Phoenix and Peoria with support from the National Highway Traffic Safety Administration of the U.S. Department of Transportation.

Heed the Speed in your neighborhood could include:

-  Distribution of flyers
-  Display of neighborhood signs
-  Neighborhood speed watch
-  Newsletter articles
-  Feedback signs
-  Officers on bicycles
-  Police verbal warnings
-  Radar speed boards/trailers
-  Targeted enforcement
-  Presentations to residents
-  Roadway applications that simulate humps
-  Automatic enforcement trailer

You can make **Heed the Speed** a success by:

- | | |
|---|--|
|  <i>Putting up signs</i> |  <i>Driving slower</i> |
|  <i>Supporting the police</i> |  <i>Asking others to slow down</i> |

For further information about **Heed the Speed**, please contact:



Phoenix: Michael Cynecki, Phoenix Street Transportation Department,
602-262-7217



Peoria: Kelly LaRosa, Peoria Traffic Division, 623-773-7652

A MESSAGE FOR PARENTS

When cars speed in residential neighborhoods, it is your children who are at greatest risk. Children act impulsively and frequently run into the street without searching carefully for cars. This problem is compounded when cars speed. If struck by a car going 40 mph, a child is 17 times more likely to die than when hit by a car going 20 mph. It's important for parents to teach their children to be safe pedestrians by stopping and looking left-right-left before entering the street.






Many parents in Phoenix and Peoria have expressed concern about the speeds that cars travel in their neighborhoods. **Heed the Speed** is a program that uses education and enforcement to reduce those speeds.

Heed the Speed in your neighborhood could include:

-  Distribution of flyers
-  Display of neighborhood signs
-  Neighborhood speed watch
-  Newsletter articles
-  Feedback signs
-  Officers on bicycles
-  Police verbal warnings
-  Radar speed boards/trailers
-  Targeted enforcement
-  Presentations to residents
-  Roadway applications that simulate humps
-  Automatic enforcement trailer



You can make **Heed the Speed** a success by:

-  ***Putting up signs***
-  ***Driving slower***
-  ***Supporting the police***
-  ***Asking others to slow down***
-  ***And teaching your children to search left-right-left before entering the street***

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Now that
You're a Driver . . .



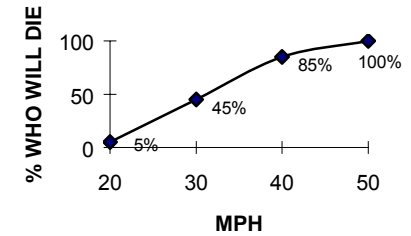
And turn this over



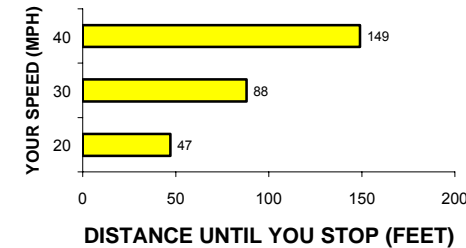
SPEED CAN BE DEADLY!

If you hit a pedestrian

- At 20 mph, 5% will die
- At 30 mph, 45% will die
- At 40 mph, 85% will die
- At 50 mph, almost all will die



You need time and space to stop



- At 20 mph, it will take 47 feet to stop
- At 30 mph, 88 feet
- At 40 mph, 149 feet

If you get a ticket for speeding, you'll also get

- A fine of over \$100
- An insurance increase of hundreds of dollars
- 3 points on your license

So . . .

- Drive carefully
- Watch out for pedestrians
- And **Heed the Speed**

City of Phoenix



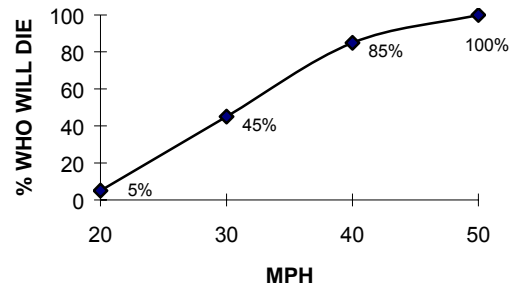
City of Peoria



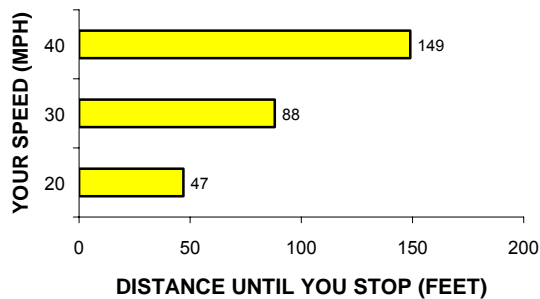
SPEED IS LETHAL!

When you hit a pedestrian

- ▶ At 20 mph 5% will die
- ▶ At 30 mph 45% will die
- ▶ At 40 mph 85% will die
- ▶ At 50 mph almost all will die



You need time and space to stop



- ▶ At 20 mph, it takes you 47 feet to stop your car
- ▶ At 30 mph, the distance almost doubles (88 feet)
- ▶ At 40 mph, it almost doubles again (149 feet)

For a speeding ticket, you'll get

- ▶ A fine of over \$100
- ▶ An insurance increase of hundreds of dollars
- ▶ 3 points on your license

Slow down and make your neighborhood safer



City of Phoenix



City of Peoria



Sources: *Arizona Driver License Manual*; Transportation Research Board Special Report No. 254: *Managing Speed*.

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**Slow down and make your
neighborhood safer**



City of Phoenix



City of Peoria




Sources: *Arizona Driver License Manual*; Transportation Research Board Special Report No. 254: *Managing Speed*.

A MESSAGE FOR CAR DEALERS

When cars speed in residential neighborhoods, both drivers and pedestrians are at risk. If struck by a car going 40 mph, a person is 17 times more likely to die than when hit by a car going 20 mph. When conducting test drives, people frequently drive too fast. To be safe, it's important that test drives be made at reasonable speeds and that they avoid neighborhood streets when possible.

Many people in Phoenix and Peoria have expressed concern about the speeds that vehicles travel in their neighborhoods. **Heed the Speed** is a program that uses education and enforcement to reduce those speeds. It is a collaborative effort of the traffic and police departments of the cities of Phoenix and Peoria with support from the National Highway Traffic Safety Administration of the U.S. Department of Transportation.

You can help make **Heed the Speed** a success by:

-  ***Asking customers to slow down***
-  ***Driving slower yourself***
-  ***Avoiding test drives on neighborhood streets***



For further information about **Heed the Speed**, please contact:



Phoenix: Michael Cynecki, Phoenix Street Transportation Department,
602-262-7217



Peoria: Kelly LaRosa, Peoria Traffic Engineering Division, 623-773-7652

FOR IMMEDIATE RELEASE

Date

***PHOENIX AND PEORIA ANNOUNCE PROGRAM TO
REDUCE SPEEDING IN NEIGHBORHOODS***

Many residents of Phoenix and Peoria have expressed concern about the speeds at which vehicles travel in their neighborhoods. Because of these concerns, the two cities have agreed to serve as test sites for a model program to reduce those speeds. Known as **Heed the Speed**, the program uses a variety of education and enforcement activities to encourage motorists to drive at or below the speed limit.

Heed the Speed is a collaborative effort of the traffic and police departments of the cities of Phoenix and Peoria with support from the National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation. It is an expanded version of a program of the same name that was previously implemented in the Arcadia section of Phoenix. Lt. Stan Hoover of the Phoenix Police Department said, "We were pleased with the results we obtained with **Heed the Speed** in Arcadia and are happy to see the program expanded."

There is abundant evidence that higher speeds are associated with a higher likelihood of a pedestrian crash and with more severe pedestrian injuries and death. There has been significant work on engineering approaches to reduce traffic speeds. There have, however, been few attempts to combine public information and enforcement techniques with engineering changes as a means of achieving greater speed reductions. Mike Cynecki of the Phoenix Street Transportation Department commented that "We can't use engineering techniques to reduce speeds on all streets because of special needs. For example, some streets are routes for emergency vehicles and therefore aren't candidates for treatments such as speed humps. We hope an enhanced education and enforcement program will be an effective way to reduce speeds on those streets."

In serving as test sites, the two cities have agreed to implement a variety of education and enforcement activities that will be evaluated over a three-month period. Among others, **Heed the Speed** activities will include the distribution of flyers, display of neighborhood signs, conduct of a neighborhood speed watch, feedback signs, newsletter articles, police verbal warnings, radar speed boards/trailers, targeted enforcement, presentations to residents, and roadway applications that simulate humps. "We're extremely pleased to be part of this innovative activity and to work with NHTSA and our colleagues in Phoenix" said Scott Nodes, Peoria's Traffic Engineer.

The Phoenix neighborhoods that will participate in **Heed the Speed** include sections of the following roads: Sweetwater, Moon Valley and Clarendon. In Peoria, sections of the following roads will participate: 95th Avenue, Desert Harbor and Bell Park. The residents of the selected neighborhoods had all previously expressed concerns about excessive vehicle speeds.

Heed the Speed will include an evaluation component to determine the effectiveness of the program in reducing speeds. If effective, it can serve as a model for other communities that wish to reduce speeding in their neighborhoods. The evaluation is being performed by Dunlap and Associates, Inc., a research-consulting firm from Stamford, CT. Richard Blomberg, the president of Dunlap, said “We’re pleased to be doing another study in the Phoenix area because of the sincere interest in traffic safety of all the agencies we’ve worked with here.”

Contacts:



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TRAFFIC SAFETY FACTS

1. *Managing Speed (TRB SR 254)*

In 1996, NHTSA reported that speed is a contributing factor in 30 percent of all fatal crashes on U.S. highways. (TRB-NRC, p. 39)

The higher the speed, the greater the fatalities, injuries, and property damage in a crash. (From Solomon in TRB, p. 63-64)

When struck by a vehicle traveling at 20 mph, 5 percent of pedestrians die; at 30 mph, 45 percent of pedestrians die; at 40 mph, 85 percent of pedestrians die; and at 50 mph, almost all die. (TRB, p. 66)

2. *Literature Review on Vehicle Travel Speeds and Pedestrian Injuries (DOT HS 809 021)*

Fatalities rose from under 2 percent of struck pedestrians when speed limits were below 25 mph to over 22 percent when speed limits were 50 mph or more. (Leaf, p. iv)

3. *Synthesis of Safety Research Related to Speed and Speed Management (FHWA-RD-98-154, p.10)*

When the national speed rate changed from 55 to 65 mph, fatalities increased by 21 percent. (NHTSA source)

4. *Arizona Driver License Manual*

How far a car travels before the driver responds and the vehicle stops. Average stopping distance (feet) of cars on dry, level pavement:

20 mph =	47 (22 + 25)
30 mph =	88 (33 + 55)
40 mph =	149 (44 + 105)
50 mph =	243 (55 + 188)
60 mph =	366 (66 + 300)
70 mph =	529 (74 + 455)

Braking distance is directly related to:

- Driver perception time
- Driver reaction time
- Type and condition of the pavement
- Type and condition of the tires
- Vehicle design and condition of the shock absorbers
- Vehicle weight when loaded or owing
- Type and condition of the brakes
- Speed of the vehicle

When the driver behind you wants to pass, reducing your speed will allow that driver to pass more quickly. The added distance will make it easier for the passing motorist to pull back into the lane.

5. *Deadly Crossings: American Intersections* (Discovery Channel Program)

It is estimated that more than seven million people will be injured in traffic accidents worldwide this year – one third of them at intersections.

In the U.S. alone, one million people will be injured crossing an intersection – 7,000 will die.

Traffic claims 40,000 lives each year.

One in four Americans knows someone who was killed or seriously injured in an intersection crash.

One hundred years ago, there were 8,000 cars on the road.

Side impacts account for 80,000 deaths and injuries each year in the U.S.

Every 24 hours in the U.S., 10 people are killed at stop sign intersections. Another 300 are injured. The vast majority are side-impact collisions.

Speed is the single most lethal element in any intersection crash and is a contributing factor in 30 percent of all fatal crashes.

Signals are synchronized to move traffic.

For every 10 mph increase in impact speed, the chance of death doubles for the driver so that the driver who crashes at 40 mph has twice the chance of getting killed as the driver who crashes at 30 mph.

The ramifications of that speed are even more terrifying when applied to pedestrians.

Forty thousand pedestrians in the U.S. are killed or injured crossing intersections each year. The difference between those who live and those who die is the speed of the car.

Pedestrians hit at 20 mph have a 95-percent chance of surviving the collision. At 40 mph, the chance of survival drops to 13 percent.

Red light running has increased by 20 percent since 1996.

A driver runs a red light approximately every six minutes in the U.S.

In only two seconds, a driver going 40 mph travels 100 feet.

Red light camera results in 40-percent reduction in red light running and a 50-percent reduction in the “halo” effect (reductions in red light running at nearby intersections).

Neighborhood 1 – Engineering versus Education/Enforcement

There is abundant evidence that higher speeds are associated with more pedestrian injuries and deaths. In fact, if struck by a car going 40 mph, a pedestrian is 17 times more likely to die than when hit by a car going 20 mph.

Many residents of the cities of Phoenix and Peoria have expressed concern about the speeds that vehicles travel through their neighborhoods and have requested help in reducing those speeds. In many instances, road humps or other engineering measures have been installed to force cars to slow down. However, as Mike Cynecki of the Phoenix Street Transportation Department has said, “We can’t use engineering techniques to reduce speeds on all streets because of special needs. For example, some streets are routes for emergency vehicles and therefore aren’t candidates for treatments such as speed humps. We hope an enhanced education and enforcement program will be an effective way to reduce speeds on those streets.”

To help solve the speeding problem, the traffic departments of both Phoenix and Peoria are embarking on a program called **Heed the Speed**. It uses a variety of education and enforcement activities with engineering changes to encourage drivers to go slower. It is adapted from a program by the same name that was previously implemented in the Arcadia section of Phoenix. Lt. Stan Hoover of the Phoenix Police Department said, “We were pleased with the results we obtained with **Heed the Speed** in Arcadia and are happy to see the program expanded.”

Phoenix and Peoria have selected neighborhoods to participate in the program from those whose residents have requested help with their speeding problem. For Phoenix, the program will be implemented on sections of the following roads: Sweetwater, Moon Valley and Clarendon. In Peoria, sections of the following roads will participate: 95th Avenue, Desert Harbor, and Bell Park.

Among others, **Heed the Speed** activities will include the distribution of flyers, display of neighborhood signs, conduct of a neighborhood speed watch, feedback signs, newsletter articles, police verbal warnings, radar speed boards/trailers, targeted enforcement, presentations to residents, and roadway applications that simulate humps.

The program is being evaluated by Dunlap and Associates, Inc., of Stamford, Connecticut, under a contract with the National Highway Traffic Safety Administration of the U.S. Department of Transportation. If effective, **Heed the Speed** can serve as a model to reduce speeds in other residential sections of the two cities and in other communities.

Neighborhood 2 – Distance to Stop

There is abundant evidence that higher speeds are associated with more pedestrian injuries and deaths. In fact, if struck by a car going 40 mph, a pedestrian is 17 times more likely to die than when hit by a car going 20 mph.

Many residents of the cities of Phoenix and Peoria have expressed concern about the speeds that vehicles travel through their neighborhoods and have requested help in reducing those speeds. They note that children sometimes run into the street without first searching left-right-left for cars. And sometimes pedestrians simply aren't seen by motorists because trees, shrubs, and other roadway articles block their views of each other until the pedestrian steps into the street. Kelly La Rosa, Peoria's Assistant Traffic Engineer, noted, "in general, it takes three times as much space to stop a car going 40 mph than one going 20 mph. Thus, if vehicles travel at slower speeds, the motorist has more time to react if a pedestrian suddenly appears in the roadway."

To help solve the speeding problem, the traffic departments of both Phoenix and Peoria are embarking on a program called **Heed the Speed**. It uses a variety of education and enforcement activities with engineering changes to encourage drivers to go slower. It is adapted from a program by the same name that was previously implemented in the Arcadia section of Phoenix. Lt. Stan Hoover of the Phoenix Police Department said, "We were pleased with the results we obtained with **Heed the Speed** in Arcadia and are happy to see the program expanded."

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Neighborhood 3 – Driver Fatality Likelihood

There is abundant evidence that higher speeds are associated with more pedestrian injuries and deaths. In fact, if struck by a car going 40 mph, a pedestrian is 17 times more likely to die than when hit by a car going 20 mph.

Many residents of the cities of Phoenix and Peoria have expressed concern about the speeds that vehicles travel through their neighborhoods and have requested help in reducing those speeds. Not only are these high speeds dangerous to pedestrians, but drivers themselves have an increased chance of fatality when speeds are increased. Peoria Traffic Engineer Scott Nodes noted, “For every 10 mph increase in vehicle speed, the driver’s chance of death doubles. Thus a driver who crashes at 30 mph has twice the chance of getting killed as a driver who crashes at 20 mph.”

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DESCRIPTIONS OF PROBLEMS THAT CAN BE AFFECTED BY SPEEDING

(Prepared as a resource for the preparation
of newsletter and other articles for the *Heed the Speed* program)

Briefly described in the following paragraphs are several problem areas in which the safety of pedestrians in residential communities can be affected by the driver's speed. They include errors made by the driver and pedestrian, conditions of both driver and pedestrian, location of the crash, roadway design factors, and the types of individuals involved. The problem areas are grouped into the following categories: pedestrian errors, motorist errors, impairment, visibility/conspicuity, special locations, geometrics/operations, high injury severity, and target group.

The information has been assembled as a resource for preparing newsletter and other articles for the **Heed the Speed** program. If there is excessive driver speed, each problem will be compounded, the likelihood of a crash will increase and the severity of the crash will increase.

Pedestrian Errors

1. Mid-block Dart-out/Dash. The pedestrian enters the street suddenly from a driveway, sidewalk, or curb and presents a short-time exposure to the motorist. The pedestrian typically goes into the roadway without stopping and searching adequately for motor vehicles and may be running. The pedestrian often enters the roadway between parked cars and is not seen by the motorist until it is too late for the motorist to stop. The motorist typically assumes that any entering traffic (including pedestrians) will yield and therefore also fails to search adequately. If the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash. Most of these crashes occur to children under 15 years of age. The problem occurs frequently on residential roadways where small children are playing, but it can occur on any roadway.

2. Intersection Dash. The pedestrian enters the roadway suddenly at an intersection and presents a short-time exposure to the motorist. As with the mid-block dart-out, the pedestrian typically enters the roadway without stopping and searching adequately for vehicles and may be running. The motorist typically assumes that any entering traffic (including pedestrians) will yield and therefore also fails to search adequately. If the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash. These crashes occur frequently to children under 15 years of age.

3. Intersection Negotiation. The pedestrian fails to negotiate an intersection safely. The pedestrian may fail to obey a traffic signal and be struck by a vehicle moving with the green light. The pedestrian may fail to clear the intersection before the light turns green for opposing traffic and therefore be trapped in the intersection. The pedestrian may misjudge the traffic gap and walk in front of a vehicle or walk into a vehicle. One or more motorists may stop to let the pedestrian pass and the pedestrian is struck by a following motorist whose view of the pedestrian is blocked by the vehicles that have stopped to yield to the pedestrian. If the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

4. Walking in Roadway. The pedestrian walks in the roadway either on the shoulder or in a traffic lane usually because an adequate sidewalk does not exist. The pedestrian may be walking to or from a disabled vehicle. Frequently, the pedestrian walks with (rather than facing) traffic. The pedestrian therefore does not have a view of traffic on the side of the road on which the pedestrian is traveling and is not able to see and react in time to avoid an impending danger. If the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash. This problem occurs most frequently on rural and residential roads. Conspicuity can be a problem – the pedestrian may be difficult to see, particularly at night.

5. Failure to Search. The pedestrian simply fails to search adequately for vehicles before entering the roadway. This is a particular problem when something screens the pedestrian and motorist from seeing each other. For example, when crossing in front of a hedge, the pedestrian might search but forget to search around the hedge. This pedestrian error occurs with many crash types. First, it occurs with intersection and mid-block darts and dashes when the pedestrian typically runs into the street and does not search at all. It occurs when pedestrians step into the roadway behind a vehicle and pay no attention to cues that the vehicle is backing. It occurs when pedestrians enter and exit parked or stopped vehicles and are struck by passing vehicles. It occurs when a pedestrian enters a traffic lane in front of a vehicle that has stopped to let the pedestrian pass and then is hit by a vehicle in the next lane whose driver cannot see the pedestrian because of the screening effect of the stopped vehicle (the multiple-threat crash). If the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash. The problem occurs with pedestrians of all ages.

6. Unsafe In-Street Activities. This problem occurs when the pedestrian is playing or standing in the street and disregarding traffic or when the pedestrian is playing games with traffic. Small children sometimes play in the street unsupervised and pay no attention to traffic. Older children and young adults stand in the street or lean against cars without regard to traffic in adjacent travel lanes. Some teens and young adults jump on and off or in and out of vehicles without regard to other traffic. In addition, some persons (usually impaired by alcohol) actually lie down and sleep in the street. If the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

Motorist Errors

7. Improper Turns. The motorist strikes a pedestrian while making a turn at an intersection or mid-block. At an intersection, the turn can be left or right, including a right turn on red. The motorist may run a stop sign or signal at an intersection while making the turn. The motorist can also be making a turn mid-block to enter or exit a driveway or alley and strike a pedestrian on the sidewalk or in the driveway. The critical element is that the motorist's workload is heightened by the turning maneuver and the motorist does not make a last check for pedestrians before starting the turn. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

8. Right Turn on Red. The motorist stops at a controlled intersection, searches for traffic approaching from the left and proceeds to make a right turn on a red signal without searching to the right. The motorist then strikes a pedestrian who is attempting to cross the street in front of the stopped motorist. By not searching to the right before moving, the motorist may also strike a

pedestrian who is attempting to cross the street that the motorist is entering. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

9. Failure to Search. The motorist simply fails to search adequately for other roadway users, and that is the major cause of the crash problem. This motorist error is commonly associated with several crash types. It occurs when the motorist is proceeding straight ahead or is turning into or out of an intersection, driveway or alley. The turn can be left or right, including right turn on red. The motorist may cut the corner when making a turn and strike a pedestrian at the curb or on the sidewalk. The motorist frequently fails to search adequately, particularly for pedestrians, when entering or exiting on-street parking, when backing, and when in a non-roadway location (for example, a parking lot). The motorist may run a sign or signal without searching or, alternatively, the motorist may obey the sign or signal but fail to yield to a pedestrian because the pedestrian is not recognized. The motorist may fail to stop and search for pedestrians when a vehicle in the next lane has stopped (the multiple-threat crash). In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

10. Excessive Speed. The motorist is driving too fast to respond quickly enough to avoid hitting a pedestrian in or entering the roadway. The pedestrian may be walking in the roadway or may appear suddenly in the roadway. In the latter case, the pedestrian typically runs out from a driveway, alley, or sidewalk mid-block, often on a play vehicle. The motorist may be overtaking the pedestrian and simply may not have sufficient time to see the pedestrian. The motorist may lose control of the vehicle due to the excessive speed.

11. Overtaking, Failure to See. The motorist is overtaking a pedestrian walking or running in the roadway and fails to see the pedestrian until it is too late to take evasive action. Although the problem is more frequent during darkness, it also occurs during daylight. Poor pedestrian conspicuity (for example, due to dark clothing) can be a contributing factor as can excess speed and alcohol use on the part of the motorist. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

Impairment

12. Pedestrian Alcohol/Drugs. The pedestrian is impaired by alcohol or drugs and is struck by a motor vehicle. The pedestrian frequently acts in an unexpected manner. For example, the pedestrian may enter the roadway suddenly from the sidewalk or median or may cross in front of a stopped vehicle and then suddenly turn and walk in front of the vehicle in the reverse direction. The pedestrian may be lying in the roadway. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

13. Motorist Alcohol/Drugs. The motorist is impaired by alcohol or drugs and hits a pedestrian. The motorist may be overtaking the pedestrian and may not detect the pedestrian or may misjudge the space required to pass safely. The motorist may make a left or right turn in front of a pedestrian. The motorist may lose control of the vehicle. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

Visibility/Conspicuity

14. Visual Screens. A visual screen is an object that blocks the pedestrian and motorist views of each other. Examples include parked cars, cars in adjacent lanes, sidewalk furniture, fences, vegetation, signs, and street clutter. Visual screen problems occur both in roadway and non-roadway situations (for example, parking lots). The views from residential and commercial driveways and alleys and at mid-block crossings are frequently blocked by visual screens. Therefore, pedestrians who enter the street from driveways and alleys without searching around visual screens are frequently struck by motorists who simply don't know that they are there. Young pedestrians on play vehicles ("big wheels") are one component of this problem since they are small, low to the ground and easily screened. Pedestrians entering the street from sidewalks are often not seen by motorists because they are screened by parked cars or a variety of other objects. Views at intersections can also be blocked. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

15. Daytime Conspicuity. The pedestrian simply isn't conspicuous enough in the daytime, that is, the pedestrian doesn't stand out enough from the background. As a result, the pedestrian is not noticed by the motorist in time to avoid a crash. These pedestrians are certainly above the visual threshold, but still fail to prompt detection and recognition from motor vehicle drivers. Motorists often fail to see pedestrians who are riding on play vehicles, probably because they are small, low to the ground, and fast-moving. The motorist can fail to see a pedestrian when executing turns because the pedestrian is camouflaged against vegetation or hidden in shadows. Daytime conspicuity problems can occur when motorists drive out of driveways or alleys. Motorists also frequently fail to detect pedestrians that they are overtaking. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

16. Nighttime Conspicuity. The pedestrian is not conspicuous at night often because the pedestrian is near or below the visual threshold for detection. Sometimes, parts of the pedestrian, particularly one wearing retroreflective garments, are visible but do not stand out from among similar competing signals. The motorist can fail to see a pedestrian when the motorist is turning in front of a pedestrian. Nighttime conspicuity can be a problem when the motorist is backing, driving out from a driveway or alley, running a sign or signal at an intersection, and overtaking a pedestrian. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash.

Special Locations

17. High-Risk Locations. Some pedestrian/motor vehicle problems occur because the location is inherently risky for a pedestrian. The types of high-risk locations vary by community. Generic locations that are typically high risk include busy intersections, high-speed roads, and residential and commercial driveways. Particular high risk locations can be generated by ongoing road construction, poor road conditions, poor lighting, flawed access management or faulty roadway design. Residential mail box locations in rural and suburban areas can be high risk if the pedestrian is forced to cross to and from the mailbox. Expressways are especially high risk locations for pedestrians. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash with a pedestrian.

18. Residential Driveways. Residential driveways are dangerous places, particularly for young pedestrians. Crashes that occur largely involve young children who run into the street from the driveway or sidewalk area without first looking for traffic. Sometimes the children are riding on play vehicles. A visual screen such as a parked car is often involved in these crashes. Backing vehicles in driveways are a particular danger to small children. Also included are crashes where a vehicle makes a turn into the driveway and strikes a pedestrian who is not seen in time for the driver to take evasive action. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash with a pedestrian.

19. Sidewalks. Pedestrians sometimes walk or run into the street directly from the sidewalk without first searching for traffic. This can be a particular problem for young children. Sidewalks are out of the normal search pattern for many motorists, and the pedestrian frequently isn't seen until it is too late. Visual screens are often a contributing factor to this problem area. Turning vehicles can cut the corner and strike pedestrians on the sidewalk. Backing vehicles can strike pedestrians on the sidewalk. Out-of-control vehicles can mount the sidewalk and strike pedestrians. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash with a pedestrian.

20. Bus Stops. At commercial bus stops, pedestrians frequently exit a bus and then try to cross the street in front of the bus without first searching for traffic. They are screened by the bus from other traffic and are struck when they emerge into traffic. Pedestrians also run from the other side of the street to catch a bus without first looking for traffic. Similar problems exist for young children when crossing the street to and from the school bus. Drivers fail to recognize the significance of the stopped bus and don't perform an adequate search for pedestrians. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash with a pedestrian. Commercial bus stops located on the near sides of intersections are particularly dangerous because they encourage crossings in front of the bus.

21. Roadway Work Sites. Construction workers are present in or near the roadway as part of their work responsibilities. Very few are trying to cross the road. Rather, they are directing traffic or performing other assigned duties in the roadway. These pedestrians are victims of motorists who are traveling too fast to take evasive action. In addition, motorists frequently misjudge the passing distance required to avoid striking a pedestrian in the roadway. Conspicuity can also be a problem.

22. Schools. Schools can be particularly dangerous places for pedestrians. Child drop-off and pick-up locations can consist of a maze of cars and buses pulling in and out at school start and closing times. Children are excited about both arriving at and leaving school and fail to pay attention to traffic. Proper design and control of drop-off locations is required to avoid pedestrian crashes. Although posted speeds are usually reduced in school zones, many motorists fail to obey them. Some schools are located on busy roads, and children need assistance in crossing the street. Safe routes to school are often not identified.

Geometrics/Operations

23. Geometrics/Roadway Design. Increases in traffic volume and speed elevate the danger of a pedestrian/motor vehicle crash. Street design elements impact driver speeds and volume. Increased speeds influence the driver's perception/reaction time and vehicle stopping times.

Crosswalk details such as high-visibility markings and stop bar placement influence driver behavior. Bulb outs and refuge islands shorten pedestrian crossing distance and improve visibility between drivers and pedestrians. The provision of a sidewalk or shoulder determines whether a pedestrian must walk in the roadway. Grade separated tunnels or bridges that remove pedestrians from the vehicle path may be practical in some situations. Subtle elements of roadway geometrics, such as corner radii, have far reaching implications for pedestrians as well as vehicles. Every roadway feature should be evaluated for its impact on both motorized and nonmotorized users.

24. Operations/Maintenance. Characteristics of the roadway such as signal timing, traffic speed and gaps, marking and striping, push button location, surface type and condition, and ramp angle and location influence the safety and behavior of pedestrians. Factors such as signals that do not allow adequate time for pedestrians to cross at the intersection will influence the crossing points selected by pedestrians. Operational changes, such as a change in signal timing, can provide effective, low-cost strategies to reduce pedestrian conflicts in some environments.

High Injury Severity

25. Fatal Crashes. Fatal crashes typically generate a significant public outcry and demands for change. Many fatal pedestrian crashes involve motorists who do not detect the pedestrian walking or running in the roadway. Crashes involving elderly pedestrians are often fatal. Fatal crashes include mid-block and intersection darts and dashes where the pedestrian presents only a short-term exposure to the motorist, vehicle turns at intersections and mid-block, driver violations at intersections, and other intersection and mid-block crashes. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash with a pedestrian.

26. Nighttime Crashes. Nighttime crashes often become a focal point because of the obvious mismatch between a pedestrian and a motor vehicle. In many nighttime crashes, the motorist fails to detect a pedestrian walking or running in the roadway. The night detection problem is most critical on higher speed roadways. Alcohol use by the pedestrian and/or motorist is often a factor. In addition, if the vehicle is speeding, the motorist may not be able to stop in time to avoid a crash with a pedestrian.

Target Group

27. Pre-School Pedestrian. A pre-school child is typically involved in crashes near home. These children often play in driveways or on sidewalks in front of their homes. When not supervised, they run into the street without stopping and looking for traffic. If a vehicle is going too fast, the driver may not be able to respond in time to avoid a crash. Pre-school children are often on play vehicles. They can be the focus of safety efforts in a pre-school setting.

28. Elementary School Pedestrian. Elementary school children are often the focus of safety efforts because they are easy to reach in a school setting. The elementary school pedestrian is typically involved in crashes close to home, at nearby intersections and in nearby non-roadway locations (for example, parking lots). These crashes can involve the pedestrian running out from a residential or commercial driveway or sidewalk. The motorist may be

backing. In addition, if the vehicle is traveling too fast, the motorist may not be able to stop in time to avoid a crash.

29. Middle/High School Pedestrian. As with elementary school students, middle and high school pupils can be addressed with school-based programs. Since middle and high school pedestrians travel farther from home than their younger counterparts, they are exposed to both neighborhood and commercial district threats as well as to threats that occur in non-roadway locations (for example, parking lots). They therefore can be involved in almost any crash type including both those common to children and those common to adults. These include mid-block dashes from driveways and sidewalks and crashes involving overtaking motorists, motorist turns and merges, motorist failure to yield to the pedestrian and backing motorists. The pedestrian can be trapped in an intersection when the light changes or can proceed past a stopped vehicle and then be hit by a vehicle in the next lane. In addition, if the vehicle is traveling too fast, the motorist may not be able to stop in time to avoid a crash.

30. Parent. Young children don't appreciate roadway dangers, and they make common errors. They run into the roadway without stopping and searching for traffic, and traffic may be moving too quickly for motorists to make safe responses and avoid a crash. Lack of parental supervision exacerbates the problem.

31. Adult. Most adults are pedestrians at some time during their day. Some walk to and from work. Some simply walk to and from buses/trains or to and from parked cars, parking lots and garages. As such, adults walk at all times of day including peak traffic hours. They are involved in all types of pedestrian crashes including those in which the motorist is speeding.

32. Recreational/Exercise Walker/Jogger. Many adults walk or jog for recreation or exercise. In order to maintain their exercise rhythm, many stop and jog in place in the street while waiting for traffic to pass. Many also walk or run in the street, frequently with traffic. Some do not wear conspicuous clothing, particularly at nighttime. They can be particularly vulnerable when a vehicle is going too fast for the motorist to respond in time to avoid a crash.

33. Older Adult. Senior pedestrians (aged 65+) are involved in fewer pedestrian crashes (7.7%) than would be expected by their numbers (12.5%) in the population. However, they account for almost one-quarter of all pedestrian fatalities. Older pedestrians typically cross at intersections and are therefore involved in many intersection crashes, including those with turning vehicles. Because they are likely to move slowly, they are particularly vulnerable to cars that are traveling too fast. Older adults tend to wear conservative clothing that does not stand out from the environment. They are also often involved in parking lot crashes where they are hit by backing vehicles. Their crashes tend to occur in the daytime.

34. People With Disabilities. Many persons with disabilities use walking for exercise as well as for purposeful activities. Those with impaired mobility may have difficulty crossing the street even on a green light. Some may not be able to increase their speed without the danger of falling. Some are confined to wheelchairs and therefore more easily screened from the motorist's view by parked cars, vegetation, street furniture, and other objects. Some may find it difficult to negotiate curbs unless ramps are provided. Persons with visual impairments may have difficulty interpreting signs and signals unless auditory cues are provided. Individuals with mental impairments may act like small children and enter a traffic lane suddenly and unexpectedly. In

addition, if a vehicle is traveling too fast, the motorist may not be able to stop in time to avoid a crash.

35. Skaters/Scooter Riders. This target group includes persons on skateboards, roller skates, inline skates, and scooters. Included are both children and adults who operate in the street, on the sidewalk, and on bicycle/pedestrian paths. Skill levels range from beginner to advanced. Most of these pedestrians do not wear protective equipment. They may appear in the street suddenly, and the motorist may have insufficient time to react to their appearance. In addition, if the vehicle is traveling too fast, the motorist may not be able to stop in time to avoid a crash. Individuals in this target group may attempt to attach themselves to moving vehicles in the roadway. On the sidewalk, they can cause dangers to pedestrians on foot. Inexperienced persons may fall.

36. Teenage Motorist. Teenage motorists lack roadway experience and often overestimate their abilities. Many young drivers operate their vehicles too fast in critical areas, especially around schools and residential neighborhoods where many young unpredictable children are present. Teenage motorists are involved in crashes in which the pedestrian darts or dashes into the roadway at an intersection or mid-block. They make violations at intersections. They are involved in crashes in which pedestrians are working or playing in the roadway. Teenage motorists cause problems when they are backing.

Heed the Speed – *The Consequences*

Announcer:

Ever get a speeding ticket? It's no fun. The fine is at least a hundred, and the insurance increases can be a lot more. Plus, you get three points on your license. If all you got was the ticket, you were lucky. If you had hit a pedestrian when you were speeding, you would have done a lot of damage. Almost all pedestrians struck at 40 miles per hour will die. But at 20 miles per hour, almost all will live. Please slow down, **Heed the Speed** and let your neighbors live.

Many individuals in Phoenix and Peoria have expressed concern about the speeds that vehicles travel in their neighborhoods. **Heed the Speed** is a program that uses education and enforcement along with traffic engineering changes to reduce those speeds. The **Heed the Speed** program is a collaborative effort of the traffic and police departments of the cities of Phoenix and Peoria with support from the National Highway Traffic Safety Administration of the U.S. Department of Transportation.

For further information about **Heed the Speed**, please contact:



Phoenix: Michael Cynecki, Phoenix Street Transportation Department,
602-262-7217



Peoria: Kelly LaRosa, Peoria Traffic Engineering Division, 623-773-7652

Heed the Speed – *In a Hurry*

Announcer:

In a hurry? Running late? Driving a little too fast? Did you know that you're 17 times more likely to kill a pedestrian at 40 miles per hour than at 20? Please slow down, **Heed the Speed** and let your neighbors live.

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Heed the Speed – *Station ID*

Announcer:

[Station call letters and name] reminds you to please slow down,
Heed the Speed and let your neighbors live.

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Heed the Speed – *Want to Be a Good Neighbor?*

Announcer:

Want to be a good neighbor? It's easy. Slow down and you'll make life better in your neighborhood for everyone. **[This station]**
[Station call letters][Station name] asks you to please slow down,
Heed the Speed and let your neighbors live.

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Heed the Speed – *The Bumps*

Announcer:

Ever hit a speed bump too fast? Well, what if that bump were a pedestrian? The faster you're going, the more likely you are to kill a pedestrian if you hit one. Seventeen times more likely at 40 than at 20. Please slow down, **Heed the Speed** and let your neighbors live.

Many individuals in Phoenix and Peoria have expressed concern about the speeds that vehicles travel in their neighborhoods. **Heed the Speed** is a program that uses education and enforcement along with traffic engineering changes to reduce those speeds. The **Heed the Speed** program is a collaborative effort of the traffic and police departments of the cities of Phoenix and Peoria with support from the National Highway Traffic Safety Administration of the U.S. Department of Transportation.

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Topics for Newspaper Articles

1. **Speeding-related crashes in U.S. and Arizona.** In 2000, speeding was a contributing factor in 29 percent of all fatal crashes in the **United States**, and 12,350 lives were lost in speeding-related crashes. In 2000, there were 1,036 traffic fatalities in **Arizona**; 354 (34%) of them were speeding-related.
2. **Speeding on interstates** - Fifty-three of the 254 speeding-related fatalities in Arizona occurred on interstate highways; the remainder on non-interstates. In the U.S., 85 percent of speeding-related fatalities occurred on roads that were not interstate highways
3. **Age and speeding** - For drivers involved in fatal crashes, young males are the most likely to be speeding. The relative proportion of speeding-related crashes to all crashes decreases with increasing age. In 2000, 34 percent of the male drivers 15 to 20 years old who were involved in fatal crashes were speeding at the time of the crash.
4. **Speeding and alcohol** - In 2000, 23 percent of the speeding drivers under 21 years old who were involved in fatal crashes were also intoxicated, with a blood alcohol concentration (BAC) of .10 g/dL (grams per deciliter) or greater. Only 10 percent of non-speeding drivers were intoxicated. In 2000, 40 percent of intoxicated drivers were speeding. Between midnight and 3 a.m., 77 percent of speeding drivers involved in fatal crashes had been drinking.
5. **Speeding and safety belts** - Among drivers in fatal crashes in 2000, those who were not speeding were nearly twice as likely to be wearing safety belts as those who were speeding at the time of the crash.
6. **Speeding and driver's licenses** - In 2000, 20 percent of speeding drivers involved in fatal crashes had an invalid license at the time of the crash compared to 9 percent of non-speeding drivers.
7. **National speed limit** - When the national speed rate changed from 55 to 65 mph, fatalities increased by 21 percent. (NHTSA source)
8. **Accidents worldwide** - It is estimated that more than seven million people will be injured in traffic accidents worldwide this year – one third of them at intersections.
9. **Pedestrian intersection crashes** - In the U.S. alone, one million people will be injured crossing an intersection – 7,000 will die.
10. **Impact speed and driver death** - For every 10 miles an hour increase in impact speed the chance of death doubles for the driver so that the driver who crashes at 40 mph has twice the chance of getting killed as the driver who crashes at 30 mph. The ramifications of that speed are even more terrifying when applied to pedestrians.